WHAT IS CLAIMED

1. A hydrogen absorbing alloy for an alkaline storage battery having a crystal structure of a $CaCu_5$ type and represented by a composition formula $MmNi_xCo_yMn_zM_{1-z}$ (in the formula, M is at least one element selected from aluminum Al and copper Cu, x is a composition ratio of nickel Ni and satisfies $3.0 \leqq x \leqq 5.2$, y is a composition ratio of cobalt Co and satisfies $0 \leqq y \leqq 1.2$, and z is a composition ratio of manganese Mn and satisfies $0.1 \leqq z \leqq 0.9$, with the proviso that the sum of x, y, and z satisfies $4.4 \leqq x + y + z \leqq 5.4$), characterized by having a surface region and a bulk region covered with the surface region, the surface region and the bulk region differing in composition, and satisfying the condition of $a/b \geqq 1.2$, letting a be the sum of the respective abundance ratios of atoms Ni, Co, and Mn in the surface region and letting b the sum of the respective abundance ratios of atoms Ni, Co, and Mn.

2. A method of producing a hydrogen absorbing alloy for an alkaline storage battery, characterized in that the first step of obtaining particles of a hydrogen absorbing alloy having a crystal structure of a $CaCu_5$ type and represented by a composition formula $MmNi_xCo_yMn_zM_{1-z}$ (in the formula, M is at least one element selected from aluminum

Al and copper Cu, x is a composition ratio of nickel Ni and satisfies $3.0 \leqq x \leqq 5.2$, y is a composition ratio of cobalt Co and satisfies $0 \leqq y \leqq 1.2$, and z is a composition ratio of manganese Mn and satisfies $0.1 \leqq z \leqq 0.9$, with the proviso that the sum of x, y, and z satisfies $4.4 \leqq x + y + z \leqq 5.4$), the second step of treating said particles of the hydrogen absorbing alloy in an acid solution, and the third step of heat-treating and sintering the particles of the hydrogen absorbing alloy treated in the acid solution at a temperature of not more than the melting point of the particles of the hydrogen absorbing alloy in a hydrogen atmosphere are carried out, to produce the hydrogen absorbing alloy having a surface region and a bulk region covered with the surface region and satisfying the condition of $a/b \geqq 1.2$, letting a be the sum of the respective abundance ratios of atoms Ni, Co, and Mn in the surface region and letting b the sum of the respective abundance ratios of atoms Ni, Co, and Mn.

3. The method according to claim 2, characterized in that at least one of a nickel compound and a cobalt compound is added to the acid solution in said second step.

4. The method according to claim 3, characterized in that in adding at least one of a nickel compound and a cobalt compound to the acid solution, the amount of the compound to be added is in the range of 0.3 to 5.0 % by

weight of the particles of the hydrogen absorbing alloy.

5. The method according to claim 2, characterized in that the pH of the acid solution in said second step is in the range of 0.7 to 2.0.

6. A hydrogen absorbing alloy electrode for an alkaline storage battery, characterized in that a conductive core member is filled with the hydrogen absorbing alloy for an alkaline storage battery according to claim 1.

7. A hydrogen absorbing alloy electrode for an alkaline storage battery, characterized in that a conductive core member is filled with the hydrogen absorbing alloy for an alkaline storage battery according to claim 1.